REMARKS

The claims have been amended in order to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically speaking, Claim 18 now recites that the surface-treating solution is capable of simultaneously treating two or more metal materials and that the specified at least one oxygen acid and/or salt of an oxygen acid is required to be in the surface-treating solution. No new matter has been added. Claims 7-13 also require two or more of the named metal materials. Claim 4 has been canceled as being redundant. No new matter has been added.

Claims 3-7, 10, 13-15 and 18 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-18 of copending application Serial No. 10/480 841. Claims 8, 9, 11, 12, 16 and 17 have been provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-18 of copending application Serial No. 10/480 841 in view of Bittner et al. Claims 3-7, 9, 16 and 18 have been rejected under 35 USC 103(a) as being unpatentable over Frelin et al. Claim 8 has been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of Bittner et al. Claim 13 has been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of Bartik-Himmler et al. Claims 14 and 15 have been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of Reghi. Claim 17 has been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of Tomlinson. Claims 10 and 12 have been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of JP '290. Claim 11 has been rejected under 35 USC 103(a) as being unpatentable over Frelin in view of JP '290 and further in view of Bittner. Applicants respectfully traverse these grounds of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to an aqueous surface-treating solution capable of simultaneously treating two or more metal materials selected from the group consisting of a ferriferous material, a zinciferous material, an aluminiferous material and a magnesiferous material. The treating solution consists essentially of 5 to 5000 ppm of a zirconium compound, calculated as metal zirconium, 0.1 to 100 ppm of free fluorine ion, at least one compound selected from the group consisting of 5 to 100 ppm of a calcium compound, calculated as metal calcium, 10 to 5000 ppm of a strontium compound, calculated as metal strontium, at least one oxygen acid and/or salt of an oxygen acid selected from the group consisting of $HClO_3$, $HBrO_3$, HNO_2, HNO_3, $HMnO_4$, HVO_3, H_2O_2, H_2WO_4, H_2MoO_4 and salts thereof, and having a pH from 2 to 6, and, optionally, 1000 to 5000 ppm of a nitric acid group, at least one polymer compound selected from the group consisting of water-soluble polymer compounds and water-dispersible polymer compounds and at least one surface-active agent selected from the group consisting of a non-ionic surface-active agent, an anionic surface-active agent and a cationic surface-active agent.

The present invention provides a surface-treating solution which can simultaneously form a surface-treated film having an excellent corrosion resistance on the surface of two or more metal materials selected from among a ferriferous material, a zinciferous material, an aluminiferous material and a magnesiferrous material, does not contain a component which is harmful to the environment and does not generate a sludge that has to be disposed of. Additionally, the surface-treated solution of the present invention eliminates the requirement for surface conditioning of the metal material, which thereby shortens the treatment time and reduces the space and expense needed for treatment.

The present invention obtains a special effect of causing a fast film-forming reaction through the inclusion of a specified oxygen acid or salt of an oxygen acid in the

treating solution and the stability of the treating solution and the reactivity thereof are balanced through the regulation of the concentration of free fluorine ion at a concentration of 0.1 to 100 ppm. In the present invention, when two or more different metal materials selected from iron, zinc, aluminum, and magnesium metal materials are simultaneously treated with the same treating solution, similar effects are obtained with all of the metals. This has been difficult to accomplish with prior art treating solutions. As shown in the Examples in the present invention, when three metal materials of a cold-rolled steel plate, a zinc-coated steel plate and an aluminum alloy plate are spot-welded, and the obtained test plate immersed in the treating solution of the present invention, uniform films are obtained on all of the metal materials and the films formed by the surface treatment are deposited simultaneously on the spot-welded portions. This is clearly unexpected in light of the prior art cited by the Examiner and further distinguishes the presently claimed invention thereover.

Application Serial No. 10/480 841 has issued into U.S. Patent No. 7 531 051 and the claims of this patent require the presence of a third component containing at least one metal selected from the group consisting of silver, copper and cobalt. The currently presented claims expressly exclude silver, copper or cobalt from being contained therein. Additionally, the currently presented claims also require that at least one of 5 to 100 ppm of a calcium compound or 10 to 5000 ppm of a strontium compound are contained in the treating solution. The claims of U.S. Patent No. 7 531 051 have no such requirement. As such, the rejection of Claims 3-7, 10, 13-15 and 18 on the ground of nonstatutory obviousness-type double patenting over the claims of U.S. Patent No. 7 531 051 clearly is inappropriate.

In a second obviousness-type double patenting rejection, the claims of U.S. Patent No. 7 531 051 are combined with the Bittner et al reference to teach a subsequent treatment with a solution containing polymer compounds or cobalt, nickel, tin,

copper and titanium/zirconium as claimed and the aluminum and magnesium metal material as claimed. However, the Bittner reference does not cure the primary defects contained in the claims of U.S. Patent No. 7 531 051 with respect to the requirement of silver, copper and cobalt and the absence of calcium or strontium as required in the present claims. Therefore, Bittner et al in combination with the claims of U.S. Patent No. 7 531 051 do not present a showing of obviousness-type double patenting of the presently claimed invention.

The Frelin et al reference discloses an acidic aqueous coating solution containing zirconium, hafnium or titanium, and fluoride and which is effective in forming on an aluminum surface a non-chromate coating to which overlying coatings adhere tightly to and which is corrosion-resistant and resists being discolored when subjected to hot water, in which the improvement comprises said coating solution includes a surfactant in an amount such that a coating formed from the surfactant-containing coating solution has an improved tendency to resist being discolored by hot water. However, there is no disclosure in this reference regarding the presence of the specified oxygen acid or salt thereof required in the presently claimed invention. As such, the reactivity of the coating solution disclosed in this reference is inferior to that of the present invention, which requires the presence of the specified oxygen acid or salt thereof.

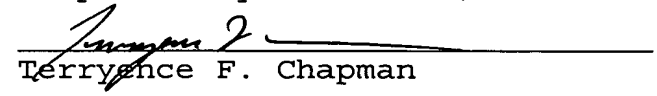
The Frelin et al reference states at column 5, lines 37-39 that the concentration of available fluoride is no greater than 500 ppm and that an excess of fluoride contributes to the stability of metals contained in the treating solution. This concentration range is much broader than that of the present invention which requires from 0.1 to 100 ppm of free fluorine ion. Additionally, Frelin et al only discloses the treating solution being used for the surface treatment of an aluminum metal material. As such, there certainly is no disclosure in this reference whether the

treating solution disclosed there would be effective on metal materials other than aluminum and be capable of simultaneously surface-treating two or more metal materials. Therefore, this reference clearly does not present a showing of prima facie obviousness under 35 USC 103(a) of Claims 3-7, 9, 16 and 18 and, further, it is respectfully submitted that the secondary references cited by the Examiner do not fill in the gaps in the disclosure of the Frelin et al reference.

The Bittner et al, Bartik-Himmler et al, Reghi, Tomlinson and JP '290 references have been cited either singularly or in combination with each other and combined with the primary Frelin et al reference in rejections of the different claims. However, none of these references cure the deficiencies contained in the primary Frelin et al reference in that they do not contain a teaching which would motivate one of ordinary skill in the art to add the specified oxygen acid and/or salt thereof to the treatment solution of Frelin et al or suggest how the treatment solution of Frelin et al could be modified to simultaneously treat the two or more claimed metal materials at a fast-film formation rate and, in particular, the effective depositing of films formed by the surface treatment simultaneously on spot-welded portions. Therefore, Applicants once again respectfully submit that the presently claimed invention is patentably distinguishable over the prior art cited by the Examiner.

Reconsideration of the present application and the passing of it to issue is respectfully solicited.

Respectfully submitted,



TFC/smd

Terryence F. Chapman

FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1631
Phone: (269) 381-1156
Fax: (269) 381-5465

David G. Boutell Reg. No. 25 072
Terryence F. Chapman Reg. No. 32 549
Mark L. Maki Reg. No. 36 589
Liane L. Churney Reg. No. 40 694
Brian R. Tumm Reg. No. 36 328
Heon Jekal Reg. No. 64 219
Eugene J. Rath III Reg. No. 42 094
Dale H. Thiel Reg. No. 24 323
Sidney B. Williams, Jr. Reg. No. 24 949

Encl: Postal Card